

NORTH PACIFIC OCEAN, OCTOBER 1937

By WILLIS E. HURD

Atmospheric pressure.—Almost continuous cyclonic activity occurred over north-central waters of the North Pacific Ocean during October 1937, and as a result the average pressure over the Aleutian Islands and contiguous regions was lower than the normal for the month. At Dutch Harbor, near the center of the low, the average pressure, 29.31 inches (0.34 inch below the normal) was the lowest for the month since 1923, when it was 29.29. The lowest barometer reading of the month was 28.03, reported by the British steamer *Empress of Russia*, on the 20th, in 52°07' N., 158°13' W.

The North Pacific high-pressure area this month lay on the average over south-central waters, with its crest at Midway Island where the average barometer was 30.07. This was considerably to the southwestward of the normal position of the anticyclone's center.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean, October 1937, at selected stations

Stations	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches	Inch	Inches		Inches	
Point Barrow.....	29.85	+0.02	30.26	11	29.44	21
Dutch Harbor.....	29.31	-.34	30.08	7	28.30	19
St. Paul.....	29.48	-.15	30.20	7	29.00	23
Kodiak.....	29.42	-.17	30.02	8	28.76	20
Juneau.....	29.78	-.09	30.24	31	29.12	23
Tatoosh Island.....	30.00	-.01	30.45	6	29.40	27
San Francisco.....	29.99	-.02	30.14	6	29.85	11
Mazatlan.....	29.83	-.01	29.88	21, 44	29.74	27
Honolulu.....	30.00	.00	30.12	31	29.82	21
Midway Island.....	30.07	+ .04	30.15	30	29.82	14
Guam.....	29.82	-.02	29.92	22	29.65	13
Manila.....	29.82	+ .02	29.97	26	29.59	14
Hong Kong.....	29.95	-.02	30.10	26	29.52	4
Naha.....	29.94	+ .04	30.15	26	29.59	16
Chichishima.....	29.95	+ .04	30.15	29	29.54	19

NOTE.—Data based on 1 daily observation only, except those for Juneau, Tatoosh Island, San Francisco, and Honolulu, which are based on 2 observations. Departures are computed from best available normals related to time of observation.

Extratropical cyclones and gales.—Cyclones of higher latitudes were numerous and in several instances during October 1937 were characterized by marked depressions of the barometer. Considering the fact that at Dutch Harbor daily pressures were below the normal of the month except on three days, it may be seen that cyclonic activity was present almost without intermission over the Aleutian Islands and vicinity. The average pressures of these storms were much lower than had occurred during October in recent years. Notwithstanding this, there was little if any increase over the normal in the number and intensity of the gales reported. There was, however, a shift in the region of greatest storminess, from the normal location in the northwestern quarter of the ocean to northeastern waters. The great southward extension of several of the northeastern lows into the region usually occupied by the Pacific anticyclone, resulted in the latter being displaced to the southwestward.

In east longitudes there were 9 or 10 days, all from the 4th to 23d, on which gales of forces 8–10, due to extratropical cyclonic activity, were reported by ships. In half these instances the high winds occurred about half way between Midway Island and central Japan; the remainder occurred south to southwest of the western Aleutians.

In west longitudes most extratropical gales of the month, of forces 8–11, were met between latitudes 40° and 54° N., longitudes 130° and 165° W., on approximately 15 days of the month, from the 11th to 31st.

The storm which caused the earliest heavy weather of the month in northeastern waters came from the vicinity of the Kuril Islands on October 6. It crossed the central Aleutians during the 9th and 10th, and on the 11th, then of considerable extent, was centered south of the Alaska Peninsula. Early on this date the eastbound British motorship *Silverguara* in 50°½ N., 162° W., reported the lowest reading, 28.48, in connection with the storm, and at 2 p. m., a wind of force 11, from the southwest, the highest reported by any ship this month in North Pacific waters. Thereafter the storm moved northeastward with decreasing energy and entered the continent from the Gulf of Alaska on the 16th.

Another energetic Aleutian storm appeared over the southern part of the Bering Sea on the 18th. On the 19th, as it moved eastward, pressure at Dutch Harbor fell to 28.30 inches, and on the Japanese steamer *Hiye Maru*, near 52° N., 165° W., to 28.26. Gales of force 9, meanwhile, were experienced in localities considerably to the southward and eastward, with barometer depressed below 29 inches over a wide area. Force-9 gales continued through the 20th and 21st along the northern routes southeast of the Alaska Peninsula, as the storm moved slowly eastward, with central pressures reported by two ships on the 20th as almost down to 28 inches. Late on the 21st the storm suddenly turned to the north, then northwest, with decreased energy, and by the 24th, after a recurve to westward in the Bering Sea, had almost described a loop since the 18th.

From the 27th to 31st stormy weather prevailed within the region 40°–50° N., 130°–150° W., with gales of force 9 reported locally, except on the 31st, when a northwest gale of force 10 was encountered by the Japanese motorship *San Ramon Maru* near 45° N., 149° W., barometer 29.13. The center of the disturbance at the end of the month lay near 43° N., 144° W., with lowest pressure 28.73 inches.

Tropical disturbances in the Far East.—In the absence of the October typhoon report from Manila, brief mention is made here of such disturbed conditions as appear from our charts and other data to have existed in the tropics of the Far East during the month.

On October 1 the American steamer *Golden Tide* experienced a southeast gale of force 8, barometer 29.76, in 17°20' N., 129°20' E., caused by a depression east of Luzon. The low moved northwestward into the China Sea, and on the 3d and 4th lay south of Hong Kong as a typhoon of considerable energy with winds up to force 11 on the 4th, pressure down to 29.38. The later history of the storm is not known.

On October 13 and 14 another depressed area lay east of the northern Philippines, moving toward Taiwan. On the 15th, when central near 20° N., 124° E., the disturbance recurved to northeast, and passed south of the Nansei Islands on the 16th. At Naha on this date one observation reported a northeast gale of force 10, barometer 29.59. The storm passed to the westward of the Ogasawara Islands on the 18th and lay north and northeast of them on the 19th and 20th. A report from the American steamer *Steel Traveler* on the 20th gave a north gale of force 10, barometer 29.47, near 32° N., 143°–144° E. The storm thereafter apparently dissipated; at least it was lost to observation.

Tropical disturbances in Mexican west coast waters.—One tropical cyclone occurred off the west coast of Mexico this month, and there were signs of the formation of three other localized disturbances. The first of these is evidenced only by a mild cyclonic circulation centered south

of the Gulf of Tehuantepec on October 6, with a report from the American steamer *Jefferson Myers* of experiencing an east-southeast wind of force 7, barometer 29.75, in 15°54' N., 97°42' W., accompanied by a wind shift from east-northeast. The second, in which no strong winds were experienced, is evidenced by a report from the American steamer *West Cactus* of a "cyclonic circulation" observed on October 12 in 24° N., 115° W. The third is shown by an observation of a north gale of force 9, barometer 29.76, reported by the American steamer *Mobile City*, on the 14th, near 14½° N., 94° W.

Late on October 24 a cyclone appeared at some distance south of the Revillagigedo Islands. It moved rapidly northeastward during the following 24 hours and from late on the 24th to and including the 27th lay close off the Mexican coast between Cape Corrientes and Manzanillo, where it appears to have disintegrated. The first observation received in connection with the cyclone was from the American steamer *Steel Mariner*, late on the

afternoon of the 24th. The ship, near 16° N., 109½° W., reported a south-southeast gale of force 9, barometer 29.71. During the 25th the American steamers *Ohioan* and *Minnesotan*, and the U. S. S. *McDougal* reported east to southeast gales of force 8, lowest barometer 29.65, within the locality 20°00' to 20°58' N., 106°12' to 107°32' W.; and the American steamer *Katrina Luckenbach*, a south-southeast gale of force 9, barometer 29.59, in 19°30' N., 106°48' W. The disturbed condition was slightly closer to the coast on the 26th, with the American steamer *Indianan* reporting an east-southeast gale of force 8, barometer 29.68 in 19°48' N., 150°54' W. By the 27th the Low had moved slightly to the southeastward near Manzanillo prior to its disappearance.

Fog—Fog was observed on only a few days in scattered localities along the northern routes this month. In Californian coastal waters it was reported on 10 days, and off Lower California on 5 days.

CLIMATOLOGICAL TABLES

CONDENSED CLIMATOLOGICAL SUMMARY

In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall; the stations reporting the highest and lowest temperatures, with dates of occurrence; the stations reporting the greatest and least total precipitation; and other data as indicated by the several headings.

The mean temperature for each section, the highest and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course, the number of such records is smaller than the total number of stations.

TABLE 1.—Condensed climatological summary of temperature and precipitation by sections, October 1937

(For description of tables and charts, see REVIEW, January, p. 29)

Section	Temperature						Precipitation					
	Section average	Departure from the normal	Monthly extremes				Section average	Departure from the normal	Greatest monthly		Least monthly	
			Station	Highest	Date	Station	Lowest	Date	Station	Amount	Station	Amount
Alabama.....	63.1	-1.6	Evergreen.....	98	6	St. Bernard.....	23	24	Mobile Airport.....	14.98	Cochrane.....	In.
Arizona.....	62.6	+2.0	5 stations.....	103	12	Fort Valley.....	19	30	Rucker Canyon.....	3.36	41 stations.....	.00
Arkansas.....	60.8	-1.7	Subiaco.....	96	6	Lead Hill.....	17	23	Portland.....	9.05	Highland.....	.98
California.....	61.6	+1.1	Indio.....	104	21	Boca.....	10	8	Crescent City (near)	8.72	45 stations.....	.00
Colorado.....	49.3	+2.6	2 stations.....	93	13	Dillon.....	9	30	Steamboat Springs	2.54	Greeley.....	T
Florida.....	71.3	-1.8	Davenport.....	97	4	Mason.....	29	24	Stuart.....	18.81	Bradenton.....	1.01
Georgia.....	62.4	-2.5	Hawkinsville.....	96	6	Blairsville.....	20	24	Gillsville.....	11.27	Thomasville.....	1.50
Idaho.....	49.7	+2.7	Malad.....	88	2	Soldier Creek.....	10	5	Deception Creek.....	3.96	Hailey.....	.22
Illinois.....	53.1	-1.9	2 stations.....	92	1	2 stations.....	17	15	Palestine.....	7.30	Keithsburg.....	1.03
Indiana.....	52.6	-2.1	Johnson.....	95	1	Salamanca.....	19	15	Williams.....	7.74	Angola.....	2.12
Iowa.....	50.3	-1.1	Ottumwa.....	94	1	3 stations.....	12	14	Postville (near).....	4.28	Oakland.....	1.08
Kansas.....	57.2	+1.2	3 stations.....	96	14	Horton.....	18	23	Chapman.....	2.67	Sublette.....	.39
Kentucky.....	55.7	-2.5	Williamstown.....	93	1	Farmers.....	17	15	Pippas.....	7.39	Cynthiana.....	2.17
Louisiana.....	67.1	-1.3	Morgan City.....	97	5	2 stations.....	28	23	Belle Chasse.....	29.04	St. Joseph.....	3.82
Maryland-Delaware.....	53.7	-2.4	Cumberland, Md.....	87	6	Oakland, Md.....	14	25	Laurel, Md.....	10.07	Delaware Breakwater, Del.....	3.48
Michigan.....	46.0	-3.1	Adrain.....	90	1	Sidnaw.....	11	23	Manistee.....	5.68	Owosso.....	1.17
Minnesota.....	48.6	-2.6	Wheaton.....	87	3	Meadowlands.....	0	22	Pigeon River Bridge.....	3.40	Gonvick.....	.63
Mississippi.....	63.3	-2.0	Columbus.....	97	16	Eupora.....	25	24	Bay St. Louis.....	14.74	Philadelphia.....	2.22
Missouri.....	56.3	-1.0	Warsaw.....	98	5	Grant City.....	15	23	Caruthersville.....	7.12	Altona.....	.65
Montana.....	48.1	+3.5	Broadus.....	89	3	Wisdom.....	14	26	Flatwillow (near).....	2.59	Choteau.....	T
Nebraska.....	51.8	+1.3	3 stations.....	95	4	3 stations.....	15	14	Hartington.....	3.96	Kimball.....	.28
Nevada.....	54.1	+3.6	Logandale.....	97	11	San Jacinto.....	11	6	Sheldon.....	1.05	7 stations.....	.00
New England.....	48.4	-1.1	Enosburg Falls, Vt.....	84	6	Somerset, Vt.....	11	17	Pinkham Notch, N. H.....	10.79	Cornwall, Vt.....	2.71
New Jersey.....	53.2	-1.5	Bridgeton.....	84	2	Runyon.....	15	17	Lakewood.....	10.33	Sussex.....	3.61
New Mexico.....	55.4	+1.7	2 stations.....	69	12	Therma.....	11	19	Eick's Ranch.....	3.32	2 stations.....	.00
New York.....	48.1	-1.8	Geneva.....	90	6	2 stations.....	12	16	High Market.....	9.25	Scotia.....	2.42
North Carolina.....	57.4	-2.5	Kinston.....	95	7	Mount Mitchell.....	10	124	Mount Airy.....	12.13	Willard.....	.70
North Dakota.....	43.9	+2	Wishek.....	94	3	Ashley.....	1	14	Hansboro.....	3.15	2 stations.....	T
Ohio.....	51.8	-1.6	Van Wert.....	91	1	McArthur.....	19	15	New Carlisle.....	5.85	Paulding.....	1.83
Oklahoma.....	61.8	-4	2 stations.....	101	15	2 stations.....	20	23	Marietta.....	8.23	Kenton.....	.59
Oregon.....	52.2	+2.5	Powers.....	89	18	Danner.....	14	6	Valsetz.....	8.53	Paisley.....	.34
Pennsylvania.....	50.6	-1.9	2 stations.....	89	11	Emporium.....	12	17	Mount Pocono.....	10.40	Beaver Falls.....	2.98
South Carolina.....	60.9	-2.9	3 stations.....	94	7	Caesars Head.....	23	24	Caesars Head.....	15.18	Rimini.....	1.10
South Dakota.....	48.8	+4	Cottonwood.....	92	3	2 stations.....	5	14	Vermillion.....	3.15	3 stations.....	T
Tennessee.....	57.4	-2.2	Tiptonville.....	93	6	Paris.....	20	24	Morgan Springs.....	10.16	New River.....	2.09
Texas.....	67.9	+2	Seymour.....	106	5	Mount Pleasant.....	27	23	Bonham.....	8.32	Gall.....	T
Utah.....	51.6	+2.6	Blanding.....	90	3	Woodruff.....	14	29	High Line City Creek.....	4.08	2 stations.....	.00
Virginia.....	54.0	-3.3	2 stations.....	89	12	2 stations.....	18	15	Pinnacles.....	14.05	Diamond Springs.....	2.47
Washington.....	53.0	+3.4	South Bend.....	89	22	do.....	22	13	Quinalt.....	17.90	Waterville.....	.06
West Virginia.....	51.6	-3.0	Grafton.....	91	12	Bayard.....	11	25	Bayard.....	11.14	New Cumberland.....	3.55
Wisconsin.....	44.9	-3.2	3 stations.....	84	11	Danbury.....	8	23	Wisconsin Dells.....	5.06	Iron River.....	.84
Wyoming.....	46.3	+2.8	Arvada.....	91	5	South Pass City.....	5	19	Bechler River.....	3.29	Recluse.....	.07
Alaska (September).....	47.2	+3.6	Richardson.....	83	5	Allakaket.....	17	13	Little Port Walter.....	28.03	Kotzebue.....	.09
Hawaii.....	74.6	+9	2 stations.....	92	14	Kanalobuluhulu.....	35	25	Keanohu No. 2.....	24.33	Pearl Harbor, T. H.....	.49
Puerto Rico.....	78.1	+8	Caguas.....	97	2	Garzas.....	56	11	Guineo Reservoir.....	18.81	Camuy.....	1.42

1 Other dates also.